

**REPORT OF THE UTILITIES DEPARTMENT**  
**OF**  
**THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA**

**DOCKET NO. 2002-1-E**  
**CAROLINA POWER & LIGHT COMPANY**

**REPORT OF UTILITIES DEPARTMENT  
SOUTH CAROLINA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 2002-1-E**

**CAROLINA POWER & LIGHT COMPANY**

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# **REPORT OF UTILITIES DEPARTMENT**

## **SOUTH CAROLINA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 2002-1-E**

### **CAROLINA POWER & LIGHT COMPANY REPORT OF FUEL ADJUSTMENT ANALYSIS**

#### **Scope of Examination**

The Commission's Utilities Department Staff analyzed the Company's procedures and practices pertaining to its fuel operation. Staff's examination consisted of the following:

- 1) Review of the Company's monthly fuel reports including:
  - a) Power Plant Performance Data Reports
  - b) Major Unit Outage Reports
  - c) Generation Mix
  - d) Generation Statistics
  - e) Retail Comparison of MWH Sales
  - f) Retail Comparison of Fuel Costs
- 2) Review of the Company's currently approved Adjustment for Fuel Costs Rider.
- 3) History of Cumulative Recovery Account.
- 4) Calculation of fuel costs to be included in the base rates for April 2002 through March 2003.

#### **REVIEW OF COMPANY'S MONTHLY FUEL REPORTS**

The Company files with this Commission monthly reports that include power plant performance data, major unit outages, generation mix, and other reports that provide the Staff pertinent data on which to evaluate the Company's fuel operating expenses.

Selected information from the Power Plant Performance Data Reports for nuclear and fossil plants is shown on Exhibit No. 1. It includes a listing of capacity factors and equivalent availability factors by major unit by month for the period, and also includes the yearly capacity factors (1999-2001) and the lifetime (cumulative) capacity factors for the nuclear units. These factors are expressed as a percentage. This percentage figure can be a useful index

when attempting to locate or identify a particular problem or unusual occurrence.

Pursuant to S.C. Code Ann. Section 58-27-865 (Supp. 2001) certain criteria are established for review of a utility's effort to minimize fuel expenses. In evaluating a utility's fuel costs under this section, it is necessary to examine and determine whether the utility has made every reasonable effort to minimize fuel costs associated with the operation of its nuclear generation system while "giving due regard to reliability of service, economical generation mix, generating experience of comparable facilities and minimization of the total cost of providing service."

The Nuclear Unit Outage Report considers each off-line outage experienced by unit, giving the inclusive dates of the outage, hours down, type of outage (Scheduled or Forced), the reason for the outage, and the corrective action taken. This information covers the period being considered in this proceeding and is shown in Exhibit No. 2A. Staff compiled this data through review of Company documents, NRC documents, and interviews with Company personnel. The Company's Nuclear Units performed very well during the period January 2001 through December 2001, accumulating an overall actual 88.9% capacity factor.

The Fossil Unit Outage Report is a listing of plants by unit, duration of outage (greater than 100 hours), reason for down time, and corrective action taken to return the unit to service. The information specifically reviewed for this proceeding is for the months of January 2001 through December 2001 and is included in Exhibit No. 2B. These Units' Availability Factors were in the 95 plus percentile for the greater portion of this period. The Company's base load fossil units achieved an equivalent availability of 91.4% for the period.

Staff reviewed and compiled a percentage Generation Mix statistic sheet for the Company's fossil, nuclear and hydraulic plants for January 2001 through December 2001. The fossil generation ranged from a high of 62% to a low 52%. The nuclear generation ranged from a high of 48% to a low of 37%. The percentage of generation by hydro ranged from a high of 1% to a low of 0%. This information is included in Exhibit No. 3. The Staff also collected and reviewed certain Generation Statistics of Major Plants for the 12 months ending December 31, 2001. This data is presented in Exhibit No. 4. This Exhibit shows the Company's major plants by name, type of fuel used, fuel cost in cents per kilowatt-hour to operate and total megawatt-hours generated for the period. The nuclear fueled Harris and Robinson Plants were lowest in cost at 0.44 cents per kilowatt-hour. The highest amount of generation of 14,119,422 megawatt-hours was produced at the Roxboro Station.

Utilities Department Exhibit No. 5 shows a comparison of the Company's original South Carolina retail megawatt-hour (MWH) estimated sales to the actual sales for the period from January 2001 through December 2001. The original projections ranged from an under-estimate of 5.20% in June 2001 to

an over-estimate of 24.40% in December 2001 with a total over-estimate of 5.64% for the period.

Utilities Department Exhibit No. 6 shows a comparison of the Company's original fuel cost projections to the costs actually experienced for the months of January 2001 through December 2001. The original projections ranged from an over-estimate of 11.66% for February 2001 to an under-estimate of 18.06% for March 2001. The difference between actual and original projection of these fuel costs is further delineated graphically on Utilities Department Exhibit No. 7.

#### **REVIEW OF THE COMPANY'S CURRENTLY APPROVED RETAIL ADJUSTMENT FOR FUEL COSTS**

Staff has reviewed the Company's currently approved Retail Adjustment for Fuel Costs Rider and found it to continue to operate properly and therefore Staff does not recommend any modifications at this time. Exhibit No. 8 is a copy of the Company's currently approved Adjustment for Fuel Costs Rider.

#### **HISTORY OF THE CUMULATIVE RECOVERY ACCOUNT**

Exhibit No. 9 is a history of the cumulative recovery account balances from inception in 1979 to December 2001.

#### **CALCULATION OF BASE RATE FUEL COST COMPONENT FOR APRIL 2002 THROUGH MARCH 2003.**

Utilizing the currently projected sales and fuel cost figures for the period April 2002 through March 2003 and including the projected under-recovery balance of \$9,906,921 in the cumulative recovery account through December 2001 (See Audit Exhibit G), the average fuel expense is estimated to be 1.485 cents per kilowatt-hour. The under-recovery balance was reduced by \$2,224,165 to account for the amortization previously approved by Order No. 2000-0299 in Docket No. 2000-001-E dated March 31, 2000. Applying this fuel factor to the period would create an ending period estimated \$28,526 over-collection in the cumulative recovery account.

The Commission has consistently expressed its expectation that the Company exercise all reasonable prudence and efficiency in its fuel purchasing practices and aggressively control the operation and maintenance of its production facilities to assure the lowest fuel costs possible. Also, the Commission has directed the Staff to monitor the Company's plant operations and fuel purchasing to insure that any inefficient or negligent practice is brought to the Commission's attention.

Exhibit No. 10 is a table of Projections of the Cumulative Recovery Account for various fuel base levels for the twelve month period ending March 2003. Also indicated in the table are the projected results using the current fuel factor base component of 1.517cents/kWh as well as the Company's proposed factor of 1.490 cents per kWh.

CAROLINA POWER & LIGHT COMPANY  
POWER PLANT PERFORMANCE DATA (%) REPORT

CAPACITY FACTOR	MW RATING	LIFE TIME	YEAR 1999	YEAR 2000	YEAR 2001	JAN 2001	FEB 2001	MAR 2001	APR 2001	MAY 2001	JUN 2001	JUL 2001	AUG 2001	SEP 2001	OCT 2001	NOV 2001	DEC 2001
BRUNSWICK 1	820	63.8	97.4	93.7	101.7	102.8	101.8	102.8	102.8	100.8	101.2	101.0	100.2	101.1	102.3	101.7	101.6
BRUNSWICK 2	811	61.2	85.8	99.0	92.1	98.9	83.0	8.7	103.2	100.6	99.6	101.7	101.2	99.9	102.7	103.1	102.3
HARRIS1	860	771.8	96.2	91.1	71.3	101.8	101.7	101.7	97.0	100.2	98.9	98.9	98.8	63.3	0.0	0.0	0.0
ROBINSON 2	683	82.0	95.0	104.0	92.2	106.5	105.7	89.3	14.6	63.5	103.0	102.4	101.6	103.4	105.1	106.0	104.9
TOTAL NUCLEAR	3174	69.2	93.6	96.5	88.9	102.3	97.8	75.6	82.3	92.6	100.6	100.9	100.4	91.1	75.3	75.4	75.0

AVAILABILITY FACTOR	MW RATING	YEAR 2001	JAN 2001	FEB 2001	MAR 2001	APR 2001	MAY 2001	JUN 2001	JUL 2001	AUG 2001	SEP 2001	OCT 2001	NOV 2001	DEC 2001
MAYO 1	745	90.1	96.3	97.5	29.3	81.0	93.4	93.3	99.6	99.9	99.9	92.7	99.9	100.0
ROXBORO 2	670	92.3	94.4	100.0	99.9	89.7	100.0	100.0	79.6	99.9	100.0	59.7	94.7	91.0
ROXBORO 3	707	92.6	86.5	99.0	100.0	99.9	40.8	94.3	95.0	99.9	97.3	100.0	100.0	100.0
ROXBORO 4	700	90.6	98.8	95.4	100.0	19.9	91.9	98.2	93.3	97.7	99.5	99.3	91.7	99.8
BRUNSWICK 1	820		99.7	98.8	100.0	100.0	98.9	100.0	100.0	99.1	99.6	100.0	99.1	99.0
BRUNSWICK 2	811		96.3	81.7	9.1	100.0	97.9	97.9	99.9	100.0	97.8	100.0	100.0	99.6
HARRIS 1	860		99.9	100.0	100.0	96.2	99.8	98.9	98.9	98.8	63.9	0.0	0.0	0.0
ROBINSON 2	683		99.8	100.0	89.3	15.0	61.5	99.9	100.0	99.5	100.0	99.8	100.0	98.7

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UTILITIES DEPARTMENT  
EXHIBIT NO. 1

Rev.  
on 5/20/02

CAROLINA POWER & LIGHT COMPANY  
NUCLEAR UNIT OUTAGE REPORT  
January 1, 2001 – December 31, 2001

<u>NO.</u>	<u>DATE OFF</u>	<u>DATE ON</u>	<u>HOURS/TYPE*</u>	<u>REASON FOR OUTAGE AND CORRECTIVE ACTION</u>
<u>BRUNSWICK UNIT 1</u>				
				NONE
<u>BRUNSWICK UNIT 2</u>				
1.	02/23/01	03/27/01	767.8/S	Routine refueling and maintenance outage.
<u>HARRIS UNIT 1</u>				
1.	09/22/01	12/31/01	2424.9/S	Refueling, Steam Generator replacement and maintenance outage.
<u>ROBINSON UNIT 2</u>				
1.	04/07/01	05/12/01	840.1/S	Routine refueling and maintenance outage.

TYPE\* F- Forced      S- Scheduled

**CAROLINA POWER & LIGHT COMPANY  
BASE LOAD FOSSIL UNIT OUTAGE REPORT  
(100 HRS OR GREATER DURATION)  
January 1, 2001 - December 31, 2001**

<u>MONTH</u>	<u>UNIT</u>	<u>HRS/TYPE*</u>	<u>REASON FOR OUTAGE AND CORRECTIVE ACTION</u>
JAN 01	None		
FEB 01	None		
MAR 01	Mayo 1	525.50/S	Unit removed from service on March 10, for annual boiler inspection and maintenance and other corrective maintenance and continued through month's end.
APR 01	Mayo 1 Roxboro 4	98.80/S 576.22/S	Continued- See March. Unit returned to service on April 5. Unit removed from service for boiler overhaul and inspection, as well as other Maintenance and inspections and testing and continued into May.
MAY 01	Roxboro 4 Roxboro 3 Roxboro 3	43.48/S 305.27/S 126.13/S	Continued- See March. Unit returned to service on May 2. Annual boiler inspection and overhaul. Removed from service to test and maintain the unit auxiliary transformer.
JUN 01	None		
JUL 01	None		
AUG 01	None		
SEP 01	None		
OCT 01	Roxboro 2	297.00/S	Annual boiler inspection/overhaul and planned and periodic maintenance.
NOV 01	None		
DEC 01	None		

TYPE\* F - Forced S - Scheduled

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CAROLINA POWER & LIGHT COMPANY

GENERATION MIX

JANUARY 1, 2001 - DECEMBER 31, 2001

2001 MONTH	FOSSIL %	NUCLEAR %	HYDRO %
JANUARY	53	47	0
FEBRUARY	55	45	0
MARCH	62	37	1
APRIL	57	42	1
MAY	52	48	0
JUNE	55	44	1
JULY	56	44	0
AUGUST	59	40	1
SEPTEMBER	55	44	1
OCTOBER	60	40	0
NOVEMBER	60	40	0
DECEMBER	61	38	1

## CAROLINA POWER & LIGHT COMPANY

### GENERATION STATISTICS OF MAJOR PLANTS

JANUARY 1, 2001 - DECEMBER 31, 2001

PLANT	TYPE FUEL	AVERAGE FUEL COST (CENTS/KWH*)	GENERATION (MWH)
Harris	Nuclear	0.44	4,500,410
Robinson 2	Nuclear	0.44	5,515,039
Brunswick 1	Nuclear	0.48	5,964,459
Brunswick 2	Nuclear	0.49	5,341,566
Robinson 1	Coal	1.68	1,019,141
Weatherspoon	Coal	2.16	698,927
Asheville	Coal	1.79	2,442,627
Roxboro	Coal	1.70	14,119,422
Sutton	Coal	2.16	2,499,640
Cape Fear	Coal	1.66	1,648,217
Mayo	Coal	1.71	3,729,299
Lee	Coal	1.94	1,857,896

(\*) The average fuel costs for coal-fired plants include oil cost for start-up and flame stabilization.

**CAROLINA POWER & LIGHT COMPANY**  
**SOUTH CAROLINA RETAIL COMPARISON OF ESTIMATED TO ACTUAL ENERGY SALES FOR 2001**

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTAL</u>
[1] ESTIMATED SALES [MWH]	670,998	600,059	564,974	577,275	578,059	579,638	689,853	665,497	735,419	533,281	561,798	624,648	7,381,499
[2] ACTUAL SALES [MWH]	675,036	601,491	542,857	532,305	547,095	611,450	625,925	668,324	634,684	543,811	502,167	502,142	6,987,287
[3] AMOUNT DIFFERENCE [1]-[2]	-4,038	-1,432	22,117	44,970	30,964	-31,812	63,928	-2,827	100,735	-10,530	59,631	122,506	394,212
[4] PERCENT DIFFERENCE [3]/[2]	-0.60%	-0.24%	4.07%	8.45%	5.66%	-5.20%	10.21%	-0.42%	15.87%	-1.94%	11.87%	24.40%	5.64%

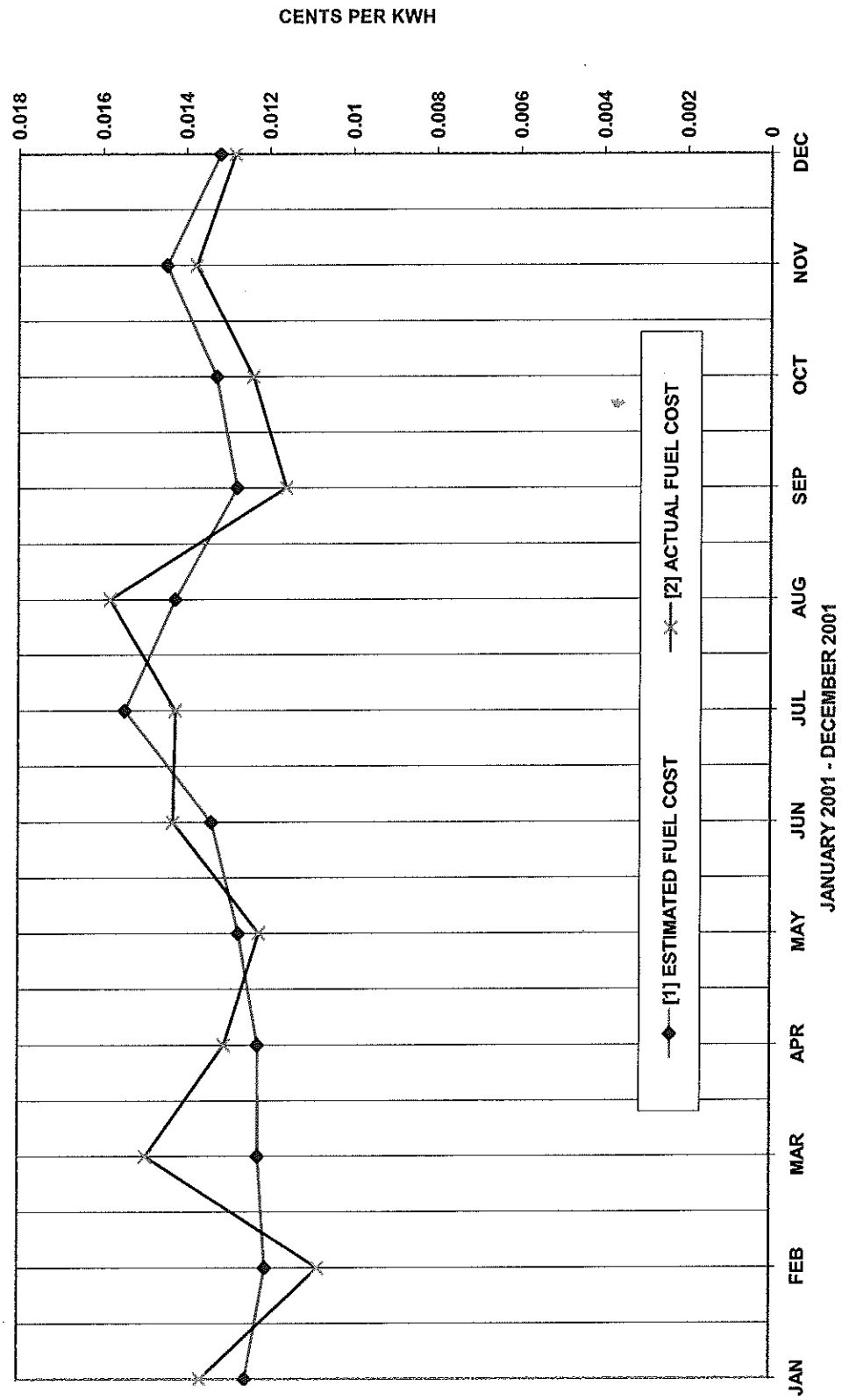
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 EXHIBIT NO. 5

**CAROLINA POWER & LIGHT COMPANY**  
**SOUTH CAROLINA RETAIL COMPARISON OF ESTIMATED TO ACTUAL FUEL COST FOR 2001**

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
[1] ESTIMATED FUEL COST PROJECTION	0.01254	0.01207	0.01225	0.01226	0.01272	0.01338	0.01546	0.01426	0.01278	0.01328	0.01447	0.01319
[2] ACTUAL FUEL COST EXPERIENCE	0.01362	0.01081	0.01495	0.01307	0.01223	0.01430	0.01425	0.01582	0.01160	0.01239	0.01376	0.01284
[3] AMOUNT IN BASE	0.01265	0.01265	0.01265	0.01265	0.01517	0.01517	0.01517	0.01517	0.01517	0.01517	0.01517	0.01517
[4] VARIANCE FROM ACTUAL [1-2]/[2]	-7.93%	11.66%	-18.06%	-6.20%	4.01%	-6.43%	8.49%	-9.86%	10.17%	7.18%	5.16%	2.73%

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EXHIBIT NO. 6

CAROLINA POWER & LIGHT COMPANY  
 ESTIMATED TO ACTUAL FUEL COST



Carolina Power & Light Company  
 (South Carolina Only)

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RIDER NO. 39T  
 ADJUSTMENT FOR FUEL COSTS

APPLICABILITY

This adjustment is applicable to and is a part of the Utility's South Carolina retail electric rate schedules.

The Public Service Commission has determined that the costs of fuel in an amount to the nearest one-thousandth of a cent, as determined by the following formula, will be included in the base rates to the extent determined reasonable and proper by the Commission:

$$F = \frac{E}{S} + \frac{G}{S_1}$$

Where:

F = Fuel cost per kilowatt-hour included in base rate, rounded to the nearest one-thousandth of a cent.

E = Total projected system fuel costs:

- (A) Fuel consumed in the Utility's own plants and the Utility's share of fuel consumed in jointly owned or leased plants. The cost of fossil fuel shall include no items other than those listed in Account 151 of the Commission's Uniform System of Accounts for Public Utilities and Licensees and the cost of SO<sub>2</sub> emission allowances recorded in FERC Account 509 (allowance cost). The cost of nuclear fuel shall be that as shown in Account 518 excluding rental payments on leased nuclear fuel and except that, if Account 518 also contains any expense for fossil fuel which has already been included in the cost of fossil fuel, it shall be deducted from this account.

Plus

- (B) Purchased power fuel costs and allowance costs such as those incurred in unit power and Limited Term power purchases where the fuel costs and applicable allowance cost associated with energy purchased are identifiable and are identified in the billing statement.

Plus

- (C) Interchange power fuel costs and applicable allowance cost such as Short Term, Economy, and other where the energy is purchased on economic dispatch basis.

Energy receipts that do not involve money payments such as Diversity energy and payback of storage energy are not defined as purchased or interchange power relative to this fuel calculation.

Minus

- (D) The cost of fuel and applicable allowance cost recovered through intersystem sales including the fuel costs and applicable allowance cost related to economy energy sales and other energy sold on an economic dispatch basis.

Energy deliveries that do not involve billing transactions such as Diversity energy and payback of storage are not defined as sales relative to this fuel calculation.

S = Projected system kilowatt-hour sales excluding any intersystem sales.

G = Cumulative difference between jurisdictional fuel revenues billed and fuel expenses at the end of the month preceding the projected period utilized in E and S.

S<sub>1</sub> = Projected jurisdictional kilowatt-hour sales for the period covered by the fuel costs included in E.

The appropriate revenue-related tax factor is to be included in these calculations.

The fuel cost (F) as determined by Public Service Commission of South Carolina is 1.517 cents per kilowatt-hour, which shall remain in effect until superseded by a subsequent Commission order.

Supersedes Rider No. 39S

Effective for bills rendered on and after April 1, 2001

RIDER-39T

## CAROLINA POWER & LIGHT COMPANY

### HISTORY OF CUMULATIVE RECOVERY ACCOUNT

<u>PERIOD ENDING</u>	<u>OVER (UNDER) \$</u>
March 1979 – Automatic Fuel Adjustment in Effect	
December 1979	1,104,730
September 1980	(12,000,131)
March 1981	( 4,060,364)
August 1981	(12,113,832)
March 1982	( 935,412)
September 1982	( 6,881,796)
March 1983	( 2,259,114)
September 1983	( 3,264,694)
March 1984	109,270
September 1984	2,172,859
March 1985	( 2,317,008)
September 1985	745,913
March 1986	1,972,280
September 1986	( 696,805)
March 1987	2,408,354
September 1987	3,310,059
March 1988	( 3,964,888)
September 1988	( 5,737,541)
March 1989	( 8,125,496)
September 1989	( 5,875,641)
March 1990	( 9,311,149)
September 1990	( 658,614)
March 1991	1,403,023
September 1991	4,661,988
March 1992	5,201,112
September 1992	( 6,712,920)
March 1993	( 9,563,180)
September 1993	0*
March 1994	( 1,010,684)
September 1994	1,975,939
March 1995	7,408,161
September 1995	2,011,489
December 1996	186,139
December 1997	( 6,212,396)
December 1998	(14,334,022)
December 1999	(17,967,157)**
December 2000	(18,627,471)
December 2001	( 9,906,921)

\*Eliminated \$14,011,263 per Commission Order No. 93-865

\*\*Reduced by \$6,500,000 per Commission Order No. 1999-324

**CAROLINA POWER & LIGHT COMPANY**  
**PROJECTIONS OF THE CUMULATIVE RECOVERY ACCOUNT**  
**FOR THE TWELVE MONTH PERIOD ENDING**  
**MARCH 2003**

	FUEL BASE	PROJECTED CUMULATIVE OVER/(UNDER) RECOVERY (\$)
	1.200	(20,449,422)
	1.265	(15,779,013)
	1.300	(13,264,177)
	1.350	(9,671,555)
	1.400	(6,078,932)
	1.450	(2,486,310)
	1.475	(689,998)
	1.480	(330,736)
ZERO UNDER	1.484	(43,326)
ZERO OVER	1.485	28,526
	1.486	100,379
CP&L PROPOSED	1.490	387,789
	1.500	1,106,313
CURRENT FACTOR	1.517	2,327,805
	1.525	2,902,624
	1.550	4,698,936
	1.575	6,495,247
	1.600	8,291,558
	1.650	11,884,181
	1.700	15,476,803